

Date: Monday, 6/2/2008 8:53:07 AM
 User: Chantal Lavoie

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : ROUND BILLET 17-4
Job Number : 39625	
Estimate Number : 10039	
P.O. Number :	Part Number : D6104003
This Issue : 6/2/2008 S.O. No. :	Drawing Number : D6104 REV B
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : B
Previous Run : 38210	Material :
Written By :	Due Date : 6/12/2008 Qty: 20 Um: Each
Checked & Approved By : <u>JUD 08.6.02</u>	
Comment : Est. B: 01.09.04 Revised Step 2 SM	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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**Comment:** PURCHASINGIssue P/O: 6503C208/06/05 (20)

a) Description: S.S round billet

b) Ø3.25" x 3.80" long

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630)

e) One blank makes 2 parts

f) Material certification required

2.0	D6104003P	17-4 SS Roundbar 3.25"OD
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 20.0000 Each(s)
 17-4 SS Roundbar 3.25"OD

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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**Comment:** PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

4.0	QC6	DIMENSIONAL CHECK
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**Comment:** DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6104

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 6/2/2008 8:53:07 AM
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ROUND BILLET 17-4

Job Number: 39625

Part Number: D6104003

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: CNC

MF 08-07-23

6.0

QC21

FINAL INSPECTION/W/O RELEASE



08/07/23 Jg

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF 08-07-23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

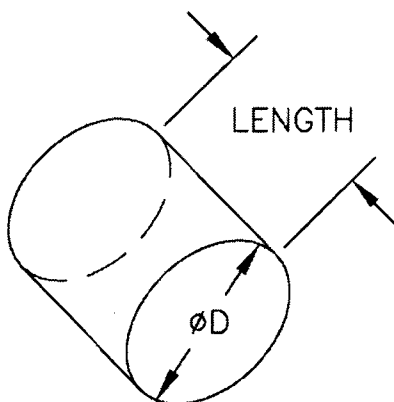


DESIGN 1.4	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

SPECIFICATION CONTROL DRAWING



Wb 39625

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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T. NO COM-ORD NO NO. TRANS. DE-FROM

**Métaux Castle®**

CERTIFICATION

A.M. CASTLE & Co. (Canada) Inc.

DATE CHARGED-LOADED

NO. COM.-ORD. NO.

POIDS TOTAL JOURNÉE-TOT DLY

REQUISITION CLIENT-CUSTOMER REQUISITION NO.

NO. COM. CLIENT-CUST. ORD. NO.

COMPTÉ-ACCT. VEND.-SLS TERR. EXPÉDIE PAR-SHIP VIA

ACHETEUR-PURCHASING AGENT

TELEPHONE

H/C TAXE NO. COM ORD

REGION LIVRAISON-DEL ZONE F.A.B.-E.O.B.

BILL

NO. FV/VILLE/EN/BALLAGE-B/L NUMBER

RÉ A-SHIP TO:

VENDU A-SOLD TO:

DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY ON K6A 1K7

INFORMATION CRÉDIT-CREDIT INFORMATION

ROUTE

10-NL-06/1
30-NL-06/1
31-NL-06/1

INSTRUCTIONS/LIVRAISON-DELIVERY

INSTRUCTIONS LIVRAISON (CONT.)-DELIVERY (CONT'D.)

INSTRUCTIONS LIVRAISON (CONT.)-DELIVERY (CONT'D.)

DESCRIPTION - ITEM 1
3.2500 RD 17CR-4NI RT SOL. TREATED COND A 3.80"
GOLD

QTE/UNITE COM.-ORDERED

PCES/PO COM-ORD

POIDS COM.-WT. ORDERED

BALLOTS-BUNDLES

PCES/PO EXP. SHP.

POIDS EXP.-WT. SHIPPED

CERTIFICATE OF CONFORMANCE

INSTRUCTIONS

COULÉE INFO-HEAT INFO QTE-QTY

A.M. Castle & Co. certifies that the material(s) supplied under this document will meet and conform to the specifications of the product(s) described herein.

A.M. Castle & Co. (Canada) Inc.

TOL + 1/8" - 0
PRIOR DIST/ORD: 10 484303

28.210FT

FORME-SHAPE

I.A.C.

42470

WEIGHT FOR SHIPPING PURPOSES ONLY. SEE INVOICES FOR ACCURATE BILLING WEIGHT. PLEASE SIGN AND DATE DRIVER'S COPY FOR RECEIPT OF MATERIAL AND, IF CHECKED, TEST REPORTS.

INSTRUCTIONS (CONT'D.)

20x3-80"

4

ENT-W

DESCRIPTION - ITEM 2

QTE/UNITE COM.-ORDERED

PCES/PO COM-ORD

POIDS COM.-WT. ORDERED

BALLOTS-BUNDLES

PCES/PO EXP. SHP.

POIDS EXP.-WT. SHIPPED

**TERMS AND CONDITIONS
OF SALE****SEE DISCLAIMERS AND LIMITATIONS
ON THE REVERSE SIDE**

INSTRUCTIONS

COULÉE INFO-HEAT INFO QTE-QTY

1 Bld
W/567760

FORME-SHAPE

I.A.C.

INSTRUCTIONS (CONT'D.)

ENT-W

DESCRIPTION - ITEM 3

QTE/UNITE COM.-ORDERED

PCES/PO COM-ORD

POIDS COM.-WT. ORDERED

BALLOTS-BUNDLES

PCES/PO EXP. SHP.

POIDS EXP.-WT. SHIPPED

ALL EXCEPTIONS FOR SHORTAGE OR DAMAGE MUST BE NOTED ON THE DRIVER COPY & CUSTOMER COPY OF THE DELIVERY RECEIPTS & SIGNED BY THE DRIVER & CUSTOMER. COPY OF SUCH RECEIPT PROPERLY NOTED MUST BE SUBMITTED WITHIN 10 DAYS WHEN CREDIT IS REQUESTED.

INSTRUCTIONS

COULÉE INFO-HEAT INFO QTE-QTY

FORME-SHAPE

I.A.C.

INSTRUCTIONS (CONT'D.)

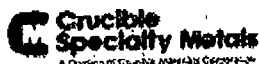
ENT-W

VOM (LETTRE MOULÉE)-NAME (PRINT ONLY)

RECU PAR-RECEIVED BY

DATE RECU-
DATE RECEIVED

SP 425, 50-A



P.O. BOX 977
SYRACUSE
NEW YORK 13201

CERTIFICATE OF TEST

A M CASTLE, INC

SHIP TO

A M CASTLE, INC

3400 N WOLF RD
FRANKLIN PARK, IL 40131

26800 MILES RD
BEDFORD HEIGHTS OH 44146

12

OUR ORDER NO.

P5-16952-7-01

DATE

04/16/08

CUSTOMER ORDER # & DATE

10-34860

CUSTOMER REQ. #

DISTRICT

R PARSONS

SHIPPED FROM

SYRACUSE

DESCRIPTION OF MATERIAL

SIZE

CRU 17-4PH RT A IAC 42470 3.250 RD
ANC-3174-10 REV 7 ASME-SA564-07ED T630 ASTM-A564-04 T630
AMS-5643B (EX SURFACE) AISI 630 UNS# S17400

CHEMICAL ANALYSIS

CAT NO.

A19797

C	MN	P	S	SI	NI	CR	MO	CU	CB	TA
.042	.40	.027	.026	.50	4.17	15.26	.15	3.23	.29	.013

CASTLE METALS CORP.

DATE RCVD 4/18/08

IAC 42470

APPROVED BY

MECHANICAL PROPERTIES

ANITY

HEAT NO.

1943 # A19797

TENSILE PSI YLD.2XPSI XELONG4D RED/AREAZ HARDNESS

BHN 345

CAPABILITY PHYSICALS AFTER 900 DEG. F. - 1 HR. AIRCOOL:

205,650 175,410 12.5 45.7 BHN 415

MACRO TEST OK

ERRITE 5 %

MAGNAFLUX F/S = 0/0

ELECTRIC FURNACE ADD MELTED

REDUCTION RATIO 27.5:1

MATERIAL SOLUTION TREATED AT 1900 DEG. F. HELD 45 MINUTES AT TEMPERATURE -

AIRCOOLED.

CRUCIBLE MATERIALS CORP. VENDOR #18610.

MATERIAL INGOT CAST.

AFIA - YES

MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT

WELD REPAIR PERFORMED

MATERIAL MELTED IN U.S.A.

THANK YOU FOR SELECTING A QUALITY PRODUCT
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED IN ACCORDANCE
WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THOSE
SPECIFICATION REQUIREMENTS.

CRUCIBLE MATERIALS CORPORATION
ACTING BY AND THROUGH ITS SPECIALTY METALS DIVISION

SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF 20

NOTARY PUBLIC

CERTIFIED BY:

QUALITY ASSURANCE REPRESENTATIVE